

Fig. S1. Schematic of lesional and perilesional skin in prurigo nodularis.

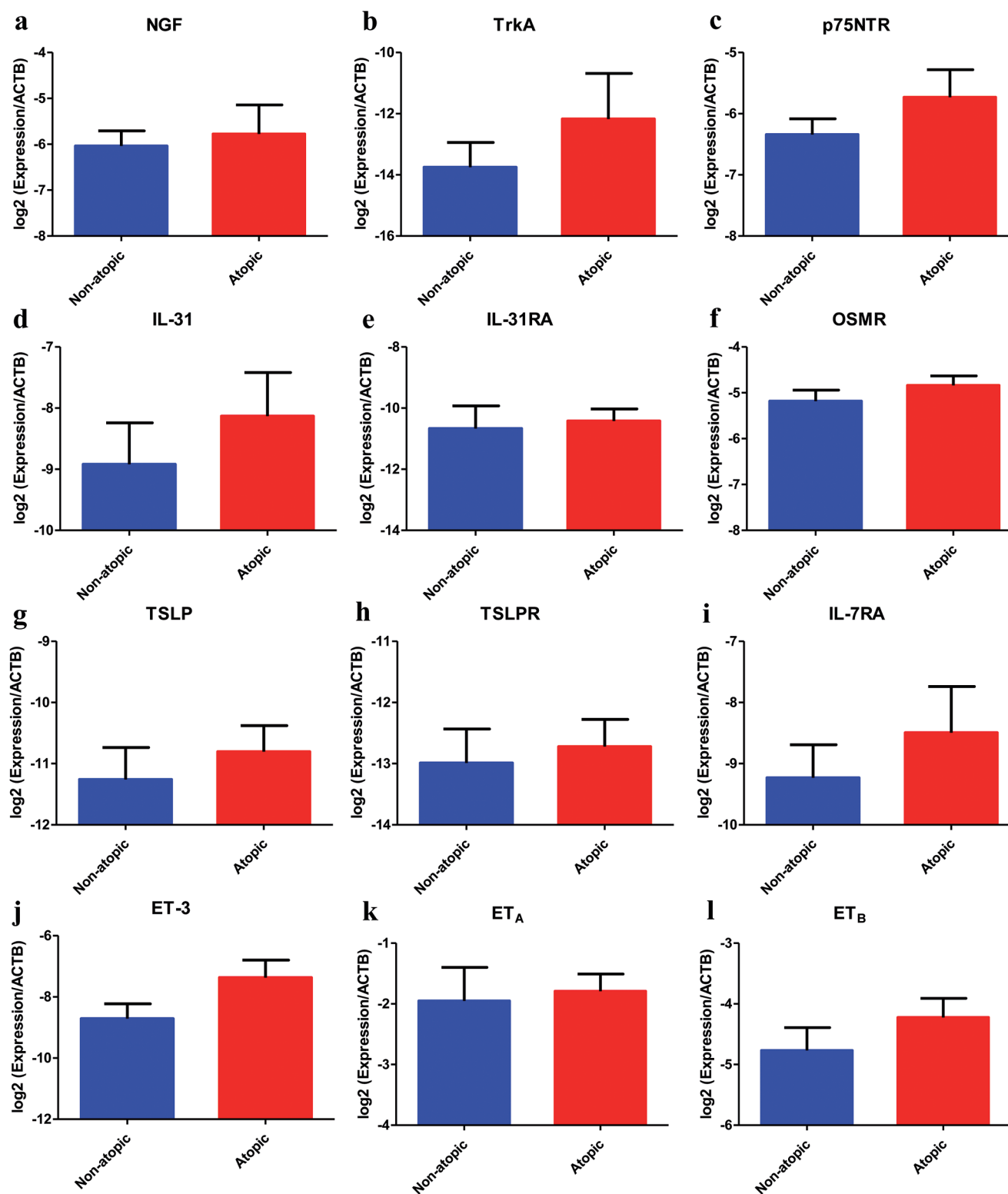


Fig. S2. Quantitative real-time PCR comparisons of selected pruritogenic mediators in lesional skin from atopic and non-atopic prurigo nodularis (PN) patients are shown. (a–c) Nerve growth factor (NGF) axis, (d–f) interleukin (IL)-31 axis, (g–i) thymic stromal lymphopoietin (TSLP) axis, and (j–n) endothelin (ET) axis. Values show log2 expression/ACTB and are presented as the means $\pm$ SEMs. Mann-Whitney *U* test was used to compare differences in expression between atopic and non-atopic lesions.

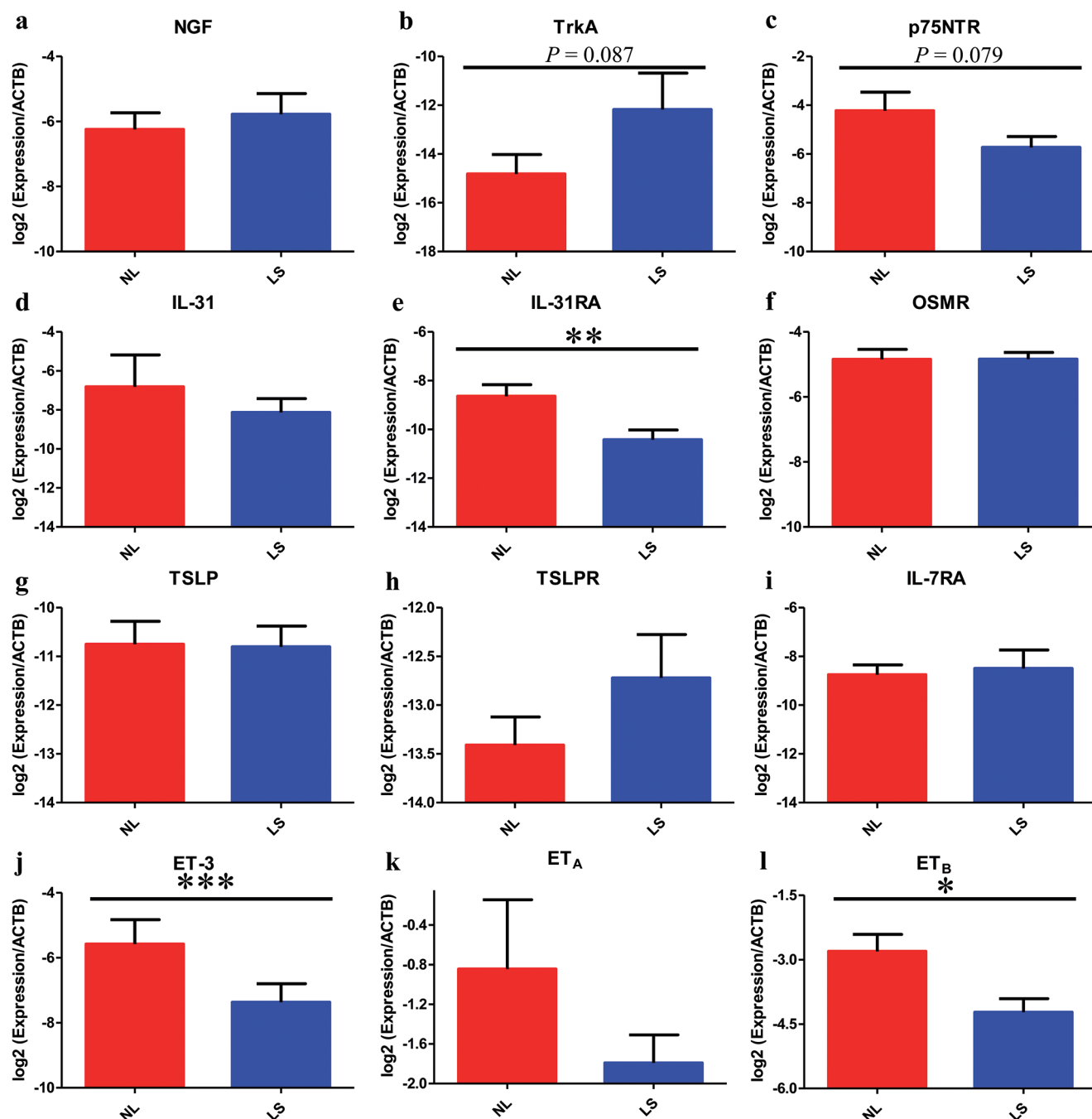


Fig. S3. Quantitative real-time PCR comparisons of selected pruritogenic mediators in lesional and perilesional skin from atopic prurigo nodularis (PN) patients are shown. (a–c) Nerve growth factor (NGF) axis, (d–f) interleukin (IL)-31 axis, (g–i) thymic stromal lymphopoietin (TSLP) axis, and (j–n) endothelin (ET) axis. Values show log2 expression/ACTB and are presented as the means $\pm$ SEMs. Stars above error bars denote comparisons of matched lesional and perilesional skin. * $p < 0.05$, ** $p < 0.01$, and *** $p < 0.001$ vs perilesional skin determined by paired Student's *t*-test. NL: perilesional skin; LS: lesional skin.

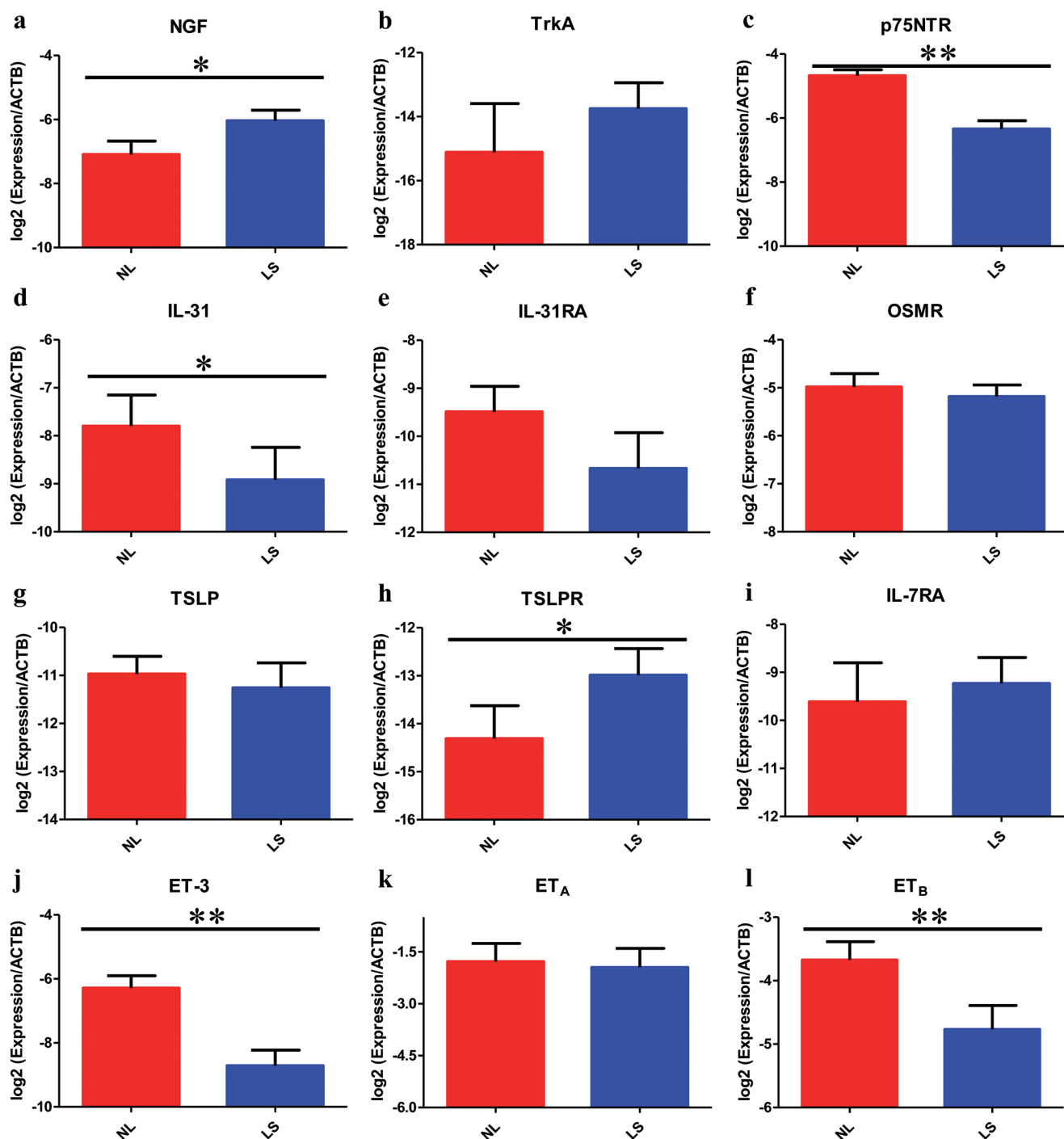


Fig. S4. Quantitative real-time PCR comparisons of selected pruritogenic mediators in lesional and perilesional skin from non-atopic prurigo nodularis (PN) patients are shown. (a–c) Nerve growth factor (NGF) axis, (d–f) interleukin (IL)-31 axis, (g–i) thymic stromal lymphopoietin (TSLP) axis, and (j–n) endothelin (ET) axis. Values show log2 expression/ACTB and are presented as the means $\pm$ SEMs. Stars above error bars denote comparisons of matched lesional and perilesional skin. * $p < 0.05$, ** $p < 0.01$, and *** $p < 0.001$ vs perilesional skin determined by paired Student's t -test. NL: perilesional skin; LS: lesional skin.

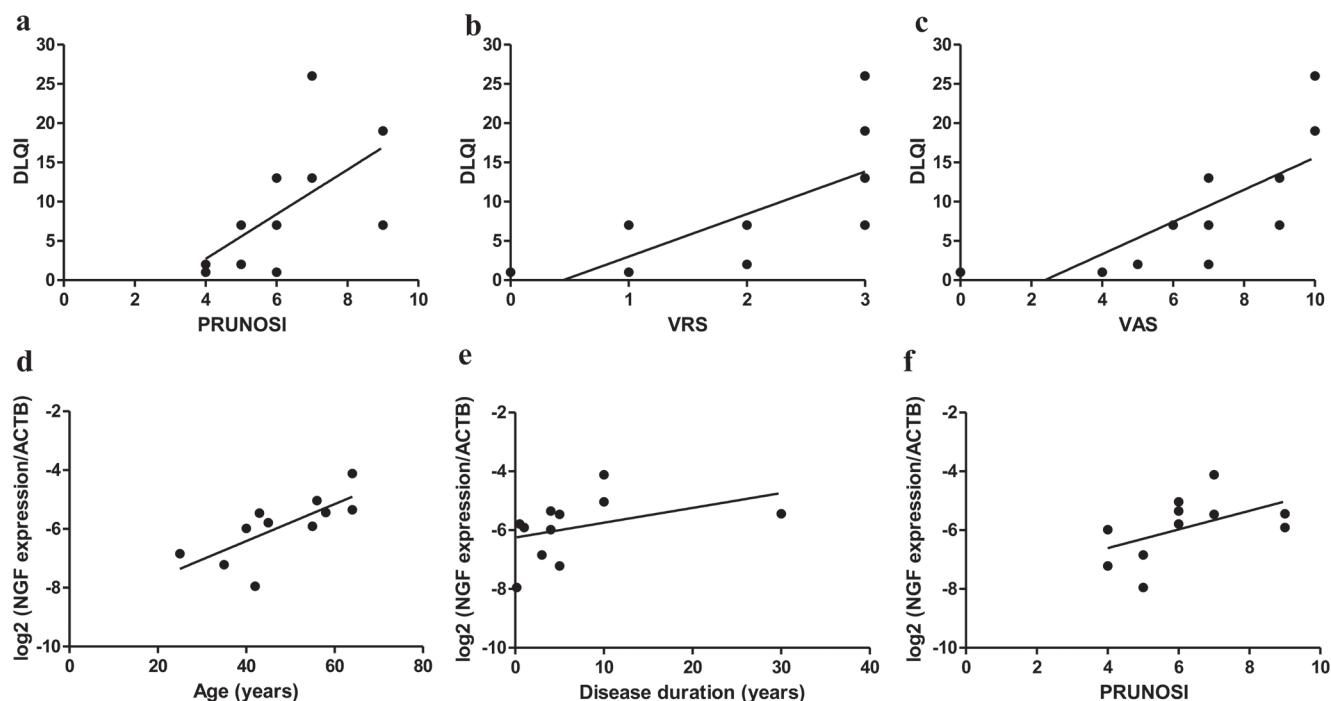


Fig. S5. Spearman analysis of clinical markers and gene expression. (a–c) Dermatology life quality index (DLQI) was positively associated with PRUNOSI (a), verbal rating scale (VRS) (b), and visual analogue scale (VAS) (c) ($p < 0.05$). (d) Positive correlation was found between lesional nerve growth factor (NGF) mRNA levels and age ($p < 0.05$). (e) Positive trend was found between lesional NGF mRNA levels and PN disease duration. (f) No significant difference was found between lesional NGF mRNA levels and PRUNOSI.

Table SI. List of antibodies used for immunohistochemistry staining

Epitope	Company	Ordering	Dilution
NGF antibody	Abcam	ab52918	1: 600
NGF Receptor antibody	Abcam	ab8874	1: 800
TrkA antibody	Abcam	ab76291	1: 25
IL31 antibody	Abcam	ab102750	1: 100
IL31RA antibody	Bioss	bs-2631R	1: 1,000
OSMR Polyclonal Antibody	Proteintech	10982-1-AP	1: 50
TSLP antibody	Millipore	Cat.#ABT330 Lot#VP1509042	1: 1,000
CRLF2 (TSLPR) antibody	Biorbyt	orb253842	1: 300
IL-7R (C-20) antibody	Santa cruz biotechnology	sc-662	1: 100
Endothelin 3 antibody	Bioss	bs-5897R	1: 250
Endothelin A Receptor antibody	Abcam	ab76259	1: 100
ETBR antibody	Bioss	bs-2363R	1: 50

Table SII. Primers used for qRT-PCR amplification

Gene	Primer	Sequence (5' - 3')	Length (bp)
<i>NGF</i>	Forward	CGTCCGGACCCAATAACAGT	135
	Reverse	AGTGTGGTTCCGCCTGTATG	
<i>TrkA</i>	Forward	AGAACCTGACTGAGCTCTAC	145
	Reverse	GTGAAATGGAAGGCATCTGG	
<i>p75NTR</i>	Forward	GTATTCCGACGAGGCCAACC	134
	Reverse	GTGTAATCCAACGGCCAGGG	
<i>IL-31</i>	Forward	GCCCAGCCGCCAAAC	64
	Reverse	GCTGCTGATTGTCTTGAGATATGC	
<i>IL-31RA</i>	Forward	CTCTCCCAGCCTTCATGTGTT	112
	Reverse	GTTCTCAGGCTTAGCTGGCAGA	
<i>OSMR</i>	Forward	TGAAGGCATGAAAGGCATCG	140
	Reverse	GTTTAGACCACCCCAAGGCA	
<i>TSLP</i>	Forward	TAACCTTCAATCCCACCGCC	206
	Reverse	GCGACGCCACAATCCTTGTA	
<i>TSLPR</i>	Forward	AGCAGCGAGACGACATTCTC	159
	Reverse	ACAGGTCAGAACGTCACC	
<i>IL-7RA</i>	Forward	ACCTGTGCTTTTGAGGACCC	84
	Reverse	CAGGCACTTTACCTCCACGA	
<i>ET-1</i>	Forward	GCTCGTCCCTGATGGATAAA	216
	Reverse	TTCTTGCTTGGCAAAAATTC	
<i>ET-2</i>	Forward	TTGGACATCATCTGGGTGAA	219
	Reverse	CTGTAGTGGCCCCTGTCTTG	
<i>ET-3</i>	Forward	GCCACCTGGACATCATTGGAT	139
	Reverse	AAGTGTGGCCGATGTGAGAG	
<i>ET_A</i>	Forward	GCAGCTTGAGAATTGCCCTC	103
	Reverse	AGAGGGAACCAGCAAAGAGC	
<i>ET_B</i>	Forward	GACCTGCTGCACATCGTCATTG	131
	Reverse	AGCACAGTGATTCCCACAGAGG	
<i>β-actin</i>	Forward	GAGCACAGAGCCTCGCCTTT	70
	Reverse	TCATCATCCATGGTGAGCTGGC	